ASL

Australian Society for Limnology Inc.

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AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.

The Australian Society for Limnology (ASL) is an Australian-based scientific society whose focus is the study and management of inland waters. The ASL was established in 1961, and has a current membership of over 650 researchers, managers, engineers, teachers and tertiary level students from all states and territories. Members have a strong professional interest in inland aquatic issues, including the maintenance of biodiversity, the maintenance and/or restoration of water quality, and the wise use of aquatic resources. The Society also has a strong interest in fostering the scientific and intellectual development of tertiary students.

The Society includes members working in government agencies, tertiary institutions and many industries related to aquatic resources. Through their daily activities, members have contact with local communities and are in a sound position to interpret and advise on inland water issues. The Society has a substantial knowledge base, and has assumed a responsibility to ensure that this is available to those who manage inland waters.

Accordingly, the charter of the ASL is to further our understanding of Australia's inland waters and to promote their wise use and sustainable management. In this manner we will contribute to the continued existence of this valued resource and the maintenance and enhancement of the quality of life for all Australians. The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

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CONTENTS

CONTENTS	3
FROM ME	4
PRESIDENT'S REPORT	4
JOINT ASL/NZLS CONGRESS - The Final Messages	6
42ND AGM OF THE ASL, 2 DECEMBER 2003	7
ADVANCED NOTICE OF 2004 CONGRESS	13
SCUTTLEBUTT, RUMOUR AND PRATTLE	16
POSTCARD FROM TIM DOEG	24
A BIT OF FUN	28
INFORMATION FROM AND FOR MEMBERS	29
FASTS	36
REVIEW	45
FORTHCOMING CONFERENCES/WORKSHOPS	47
ASL VOLUNTEERS	50
ASL MEMBERSHIP FORM	54
ELECTRONIC NEWSLETTER APPLICATION FORM	56
REGIONAL EXECUTIVE MEMBERS 2003-2004	57

Material for publication in the **Volume 42 # 2** (June Issue) of the Newsletter should be sent to the Editor by **Friday 28 May 2004** (Address Below).

Volume 42 # 3 contributions (September Issue) are due on **Friday 27 August 2004**, and **Volume 42 # 4** contributions (December Issue) are due on **Friday 26 November 2004.**

All articles should be forwarded, if possible, as unformatted text on a disk or via email.

ASL Home Page - http://www.asl.org.au/

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Membership Information and contact details of the Regional Executive Members can be found at the back of this Newsletter.

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FROM ME

Sorry this edition is late. No excuses, just busy at work, life, kids and the farm.

Seems like I'm not the only busy one, with only six contributions from groups across Australia. Maybe next edition, we'll all have something to contribute.

Enjoy the read.

Cheers
Rhonda

PRESIDENT'S REPORT

Welcome back for another year - hope the break was rejuvenating! I am still receiving messages with accolades from the New Zealander's about how much they enjoyed the congress in Warrnambool. It was an excellent meeting and we all look forward to a similarly enjoyable one at Adelaide University in late Nov-early Dec this year (see elsewhere in the newsletter). I think all of us were very impressed by the standard of student presenters at the Warrnambool congress, from both sides of the Tasman, and it reiterated our observations that much of the ground-breaking original work being done in Australian limnology is by our students. I urge University academics and postgrads to encourage ASL membership of new students and to ensure you maintain your own. At this time, as new students are embarking on a career in limnology, what better start than to become a member of ASL?

I spent some time in Western Australia over the Christmas break talking with Dan Gaughan, immediate past-president of ASFB about our respective societies and their goals, and he was impressed by our progress and efforts to develop policy statements and to be involved in FASTS activities such as Science meets Parliament. This, while still maintaining the friendly and informal society that thrives on active involvement of its members. We talked about possibilities into the future of joint meetings or, as had been canvassed, meetings running back to back in a shared venue. I'm keen to hear member's thoughts about this, especially those who belong to both societies.

I want to close by congratulating, again, the 2002 and 2003 ASL Medal winners Dr Brian Timms and Dr Max Finlayson and the 2002 and 2003 Early Career Excellence Award winners Dr Justin Brookes and Dr Ben Gawne, respectively. Nominations for both awards are open again and close on Friday 27th August, 2004. Why wait? Nominate or second a worthy colleague now.

Have a great 2004!

Andrew Boulton

JOINT CONGRESS ASL/NZLS ~ WARRNAMBOOL 2003

The Final Messages

ASL EXECUTIVE MEETING, 1 DEC 2003, WARRNAMBOOL

Present: Andrew Boulton, Richard Marchant, Frederick Bouckaert, Ivor Growns, John Gooderham, Sabine Schreiber, Jane Chambers, Rhonda Sinclair and Margaret Hart.

1. Agenda items for AGM: there was no disagreement from executive members about most proposed items.

(a) The main discussion point concerned the location for the ASL congress in 2004 (agenda item 15). K. Muller had suggested Goolwa but the feedback from SA members was that no suitable venue would be able to be found there for the 220-250 people likely to attend. It was suggested that the University of Adelaide would be a suitable venue but this would need confirmation e.g. could a booking be made for the September common week? More discussion with SA members was required before a decision could be made.

(b) Science meets Parliament: F. Bouckaert would give a report at the AGM.

(c) Electronic membership directory: this will be voted on at the AGM.

(d) Australian Wetland Alliance: requests from this organisation for accommodation within the ASL had been refused by A. Boulton.

(e) Australian Water Partnership: S. Schreiber has produced a poster about this group and is currently representing ASL. She will give a report at the AGM.

(f) J. Nevill's discussion paper: the status of this document will be discussed at the AGM.

2. Finances: M. Hart summarised the financial situation of the society. The ASL is still spending more each year than it derives from subscriptions. The shortfall is made up by profit from the congress. M. Hart suggested that those who want a hard copy of the newsletter should pay an extra $20 to cover costs. This proposition will be voted on at the AGM.

42nd Annual General Meeting of the Australian Society for Limnology, 2 December 2003, Warrnambool VIC

(p = proposed, s = seconded)

1. Adoption of agenda: carried (p = L. Barmauta, s = R. Marchant).

2. Aplologies: S. Treadwell, N. Rea, M. Barson.

3. Acceptance of minutes of last AGM (p = M. Grace, s = S. Schreiber).

4. Matters arising from minutes: none.

5. President's report:

A warm thanks to this year's Executive, especially the V-P Sabine Schreiber for her consistently sensible advice, Secretary Richard Marchant for his depth of knowledge of the workings of ASL, Treasurer/Membership Secretary Margaret Hart for maintaining the Society's finances and membership records, Newsletter Editor Rhonda Sinclair for her good humour and reliable production and collation of an excellent newsletter, and Webmaster Simon Josey for maintaining our burgeoning website, and swiftly coordinating our listserver and web additions. I also want to thank Frederick Bouckaert who has represented ASL at several FASTs meetings, presented reports on the FASTs AGMs and been our 'Canberra Correspondent'.

I would like to draw attention to Highlights of the International Year of Freshwater 2003 that have involved ASL members:

* Talk by the first ASL Early Career Excellence Award winner, Dr Justin Brookes, and announcement of the second winner, Dr Ben Gawne.

* Development of the Bill Williams Travel Scholarship with Richard Marchant and Mike Geddes, along with its first winner, Dr Danielle Warfe.

* Other winners were Gene Likens (National Medal of Science, 2002, US) and Max Finlayson (Award of Appreciation from Ramsar), and Max again for this year's ASL Medal.

* Excellent representation of ASL at 'Science meets Parliament', with water firmly on the political agenda - ASL was able to provide some financial support for several members to attend.

* Representation by Sabine Schreiber on Australian Water Partnership (AWP) on Steering Committee - global partnership with emphasis on supporting countries in their sustainable management of water resources (with a toolbox of Integrated Water Resources Management).

* Great progress led by Jon Nevill on the ASL policy on freshwater protected areas, and his review of Australian inventories of freshwater ecosystems; and led by Ben Kefford, on the ASL policy on salinity.

* Progress by Margaret and Simon (and Shane Mortenson) on electronic membership directory (for discussion) and newsletter increasingly being taken up as electronic form.

* Change to the Society's financial year to July-June to comply with regulations of Consumer and Business Affairs in Vic.

* Chapter meetings continuing in some States, with successful speakers - excellent initiatives by regional reps.

It has been a busy but productive year, and has been capped off by an excellent congress with our New Zealand counterparts. I wish everyone the best for next year. (p = R. Marchant, s = M. Finlayson)

6. Secretary's report:

Three teleconferences were held (Nov 2002, Feb and Aug 2003) and the minutes published in the newsletter. Information received from FASTS has also been published in the newsletter. Rules for the Bill Williams Travel Scholarship have been developed as foreshadowed at last year's AGM. These were published in the Sept 2003 newsletter with a deadline of 31 Oct 2003 for applications for the first award. R. Marchant noted that it was not yet clear how frequently awards could be made because this depended on the amount of interest accrued by the travel fund. However, it was hoped that an award could be made every two years. This year's award went to Dr Danielle Warfe who has just completed her PhD at the University of Tasmania. The award will enable her to attend a NABS meeting in Vancouver in June 2004 where she will present part of her thesis work. There was some discussion about the state of the travel fund and L. Barmuta suggested that members could make donations to this fund. (p = A. Boulton, s = J. Gooderham).

7. Treasurer's report

M. Hart informed members that total membership of the society is 635 of which 18 are institutional members, 24 are life members and 28 are 10-year members. The breakdown by state and between ordinary and students members is:

State	Ordinary	Student
NSW	103	18
ACT	31	9
NT	7	3
QLD	59	6
SA	28	10
TAS	28	5
VIC	132	46
WA	44	22

The financial statements are at the end of these minutes. (p = A. Boulton, s = J. Chambers). *(Note from Editor - the financial statements were available in early December and were published in the December 2003 newsletter. Please email me if you'd like another copy).*

8. Honorarium for Treasurer:

A $2000 honorarium was proposed by A. Boulton (s = J. Chambers).

9. Auditor's report:

At the end of these minutes.

10. Newsletter Editor's report:

R. Sinclair noted that she needed current email addresses if members are to receive electronic versions of the newsletter. She also observed that about 50% of the people mentioned in the Scuttlebut section of the newsletter are not ASL members and she hoped that members associated with them might try to get them to join. (p = A. Boulton , s = P. Schulz).

11. Medal Committee report:

By unanimous agreement, the ASL Medal Committee awards the 2003 Medal to Dr Max Finlayson for the following reasons:

A world-wide promotion of Australian limnology and wetland management through his involvement and advisory role in international wetland affairs, an involvement that led to his Recognition of Excellence Award in the 2002 round of Ramsar Awards. Dr Finlayson has led the Ramsar Convention's Scientific and Technical Review Panel since its inception in 1992, and has visited most parts of the globe to promote wise management based on rigorous research on the world's wetlands. He is internationally respected and tireless in his efforts to guide conservation policies at a time when wetlands are disappearing or being rapidly degraded.

An impressive contribution to limnological scientific research, evidenced by a strong research publication record (177 publications - many of them in refereed journals) that spans a wide range of topics, particularly wetland plants and weeds. His research work on tropical limnology in Australia (a neglected field compared to work on the southern areas) has brought the challenges of tropical limnology into the spotlight and provided a firm basis for the excellent ongoing work of several agencies in the 'Top End'. His development of wetland inventory, assessment protocols is of particular value as it promotes sustainable use of wetlands through broadening the knowledge base of wetlands.

Excellence in education and communication derived from his broad knowledge, affable and articulate manner, and steadfast dedication to protection and informed management of the world's wetlands. Each member of the ASL Medal Committee has been privy to his wit and wisdom, and while President of ASL, he created many new initiatives and inspired healthy debate over ASL's role as a society. He continues to be very active in ASL, particularly

through his garnering communication and collaboration between ASL and other wetland societies - the annual Wetland Forum meetings are good examples of this.

While many previous winners of the ASL Medal have shown exceptional qualities in one or two of the key criteria of research excellence, education and/or communication excellence, and management excellence, Dr Finlayson excels in all three categories.

Max Finlayson was presented with the medal during the opening ceremony of the congress. Following the reading of his nomination at the AGM, Max suggested that the ASL executive consider awarding medals to past winners of the Hilary Jolly Award (forerunner of the ASL medal). The ASL executive will examine the possibility of doing this.

12. ASL Early Career Excellence Award:

DR BEN GAWNE

The ASL Early Career Excellence Award Subcommittee was unanimous in agreeing that the achievements during this year's winner's early career comprise substantial and tangible contributions to international limnology, both theoretical and applied.

The recipient did his BSc (Hons) at Melbourne Uni (Zoology) and then graduated from Monash University in 1993 with a PhD from the Department of Ecology and Evolutionary Biology, supervised by Sam Lake. Several papers arose from his thesis, and are considered some of the earliest and best experimental work in Australia on caddisfly grazer-algal epilithon interactions on stones. Shortly after, the recipient traveled to Uni of Nebraska, Lincoln, where as a post-doc from 1992-96, he continued his research on epilithic algal succession, effects of riparian zone vegetation on lotic periphyton, OM processing in the Missouri River and aquatic invertebrate succession in streams.

He returned to Australia to take up the Scientist-in-Charge position at MDFRC's newly-established Lower Basin lab in Mildura and held that position until 2002, when he was appointed the 3rd Director of the MDFRC in Albury, to fill Terry Hillman's big shoes. While in Mildura, he led the research program, not only seeking funding (obtaining $1.7m) and providing scientific guidance to an accumulating staff but also going to lengths to coordinate and supervise knowledge exchange and education with the wider community. His community standing and acceptance, and his enthusiasm for the central role of limnology in river management led to the firm establishment of the Mildura Lab.

As Director of MDFRC, he manages all three regional labs (Albury, Mildura and Goondiwindi), is Team Leader of the Riverine Ecology group in CSIRO Land and Water, is a member of the CRCFE Senior Management Team, Project Leader of the Lowland Rivers program exploring carbon processes and relationships with river flows, and is Director of Wetland Care Australia. In 1996, he was awarded the CRCFE's Director's Award for contributing to limnological expertise within Australia, and now is the ASL Early Career Excellence Award is awarded to Dr Ben Gawne. Ben is invited to give a paper at next year's conference and to join the Award subcommittee for next year.

13. Student awards:

A total of 76 students from ASL and the NZ Limnological Society presented high quality talks on their Honours and PhD work at the 42nd ASL meeting in Warranambool. Australian students were judged separately by a panel of 11 judges from ASL, and we were hard-pressed to identify the best of an excellent field.

In the Honours category, the joint winners for best talks were Sally Kent (Northern Territory University) and Heath Chester (University of Canberra) with commendations for the talks by Lynette da Silva (Murdoch University) and Monica Tewman (Monash University).

The best talk in the PhD category was by Bernadette Bostock (Deakin University), with commendations awarded to Sue Gehrig (University of Adelaide), Dan Borg (University of Melbourne) and Joanne Clapcott (University of Tasmania).

This year's Murray Wetlands Working Group Prize, presented by Paula D'Santos, went to Christina Mykytiuk (Murdoch University).

Sinclair Knight Mertz also made two prizes available (shared between ASL and NZLS) and on SKM's behalf, Dr Paul Boon awarded the prize to Lien Sim (Murdoch University).

The CSIRO journal *Marine and Freshwater Research* offered a prize of a year's subscription to the journal for the best poster that captured the integrative nature of the journal's scope, and this was awarded to Dan Borg (University of Melbourne) by the Editor Dugald McGlashan.

The ASL Prize for the best poster went to Claire Sellens (University of Canberra), with commendations awarded to Sarah Mika (University of New England) and Bonnie Atkinson (Monash University).

ASL would like to thank the judges who included Barbara Downes, Chris Walsh, Darren Ryder, Ivor Growns, Jenny Davis, Justin Brookes, Michelle Casanova, Sabine Schreiber, Stuart Bunn, Paula D'Santos and Andrew Boulton.

14. Student travel awards:

Eight travel awards were made this year to enable students to attend the Warrnambool congress and present their work. Seven students from WA: J. Giles, S. Wild, M. Toner, L. Sim, C. Mykytiuk, L. Da Silva, P. Novak; and K. Aldridge from SA received awards.

15. Future congresses:

A bid to hold a congress in South Australia in 2004 was received during the year. Originally the plan was to hold the congress in Goolwa, but various members believed that this location would not provide adequate venues for the 220-250 delegates expected. M. Geddes informed members that the Australian Society for Fish Biology would be holding a conference in Adelaide in September 2004 and suggested that ASL might hold its meeting

beforehand i.e. 14 -18 September. This possibility will be examined by SA members who will report back to the Executive by early 2004.

L. Barmuta on behalf of Tasmanian members offered to hold a congress in Tasmania in 2005 or possibly in 2004. A. Boulton suggested Armidale and the University of New England as a possible venue in 2005 or 2006. Thus at the time of the AGM no firm offer has been received for next year's congress but it is likely that it will be held either in SA or Tasmania and either in September or December. A show of hands indicated that SA was slightly more favoured than Tasmania and that there was no strong preference for time of year.

16. Election of executive:

Four regional members resigned during the year and the following were nominated in their place: D. Warfe (Tas) (p = J. Gooderham, s = L. Barmuta); F. McKenzie-Smith (Qld) (p = A. Boulton, s = R. Sinclair); S. Wild (WA) (p = A. Boulton, s = J. Davis); B. Downes (Vic) (p = S. Schreiber, s = R. Marchant). All were elected unopposed.

17. Election of the auditor:

Coster Galgut Pty Ltd was re-elected (p = M. Hart, s = I. Growns).

18. General Business:

(a) Science meets Parliament (SmP): Fred Bouckaert represented the ASL at this year's event, along with a number of other members. He noted that ASL was one of the best represented societies this year. He also attended the FASTS AGM, which was held shortly after SmP. According to FASTS, interest in SmP is growing strongly each year and ASL members interested in attending should register early as there is much interest from other societies. Fred's impression was that interest from politicians in environmental and science issues was growing and that the ASL was not seen as a lobbying group but as a group primarily representing science.

(b) Electronic membership directory: The Society is conscious of protecting privacy in any attempt to place membership details on the web. Simon Josey (webmaster) informed members that they would be able to edit their own entry but no others, once the information had been placed on the web. Of the 20 replies Margaret Hart received from the survey of these matters (in the Sept 2003 newsletter) 19 were comfortable with current details in the printed membership directory being placed on the web.

(c) Electronic version of newsletter: Many members want email copies of the newsletter but those who want a hard copy will need to pay extra. A. Boulton proposed (s = R. Marchant) that "those who want a hard copy should pay an extra $20 from I July 2004". This was carried: 71 for and 2 against.

(d) Australian Wetland Alliance: A. Boulton has refused their request for office accommodation.

(e) Australian Water Partnership: S. Schreiber has represented ASL on this panel for some time. She drew attention to a poster explaining AWP (on display at the congress) and to brochures about the group.

(f) J. Nevill's discussion paper: the executive has seen this document. It is quite large and the executive have suggested to him that a short policy document could be abstracted from his paper. The new executive will pursue this issue.
(g) L. Barmuta suggested the society give a vote of thanks to John Godderham and Edward Tsyrlin, the authors of the recently published "Waterbug Book" (CSIRO Publishing). This was warmly welcomed by members.
(h) S. Schreiber suggested a vote of thanks for Tim Doeg as the society's media liaison officer. This also was warmly accepted.
(i) B. Robson, chair of the organising committee, proposed a vote of thanks to this committee and in particular to Ty Matthews, Al Danger and S. Schreiber. This was overwhelmingly carried.

Meeting finished at 3pm

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Short ASL Executive Meeting , 3 December 2003, Warrnambool VIC

1. After examining B. Robson's suggestions about running conferences, the Executive will incorporate revisions into the booklet on conference guidelines.
2. M. Hart wants to buy new bookkeeping package for her computer. Carried (p = M. Hart, s = R. Sinclair).
3. R. Marchant will investigate using other telephone companies that offer cheaper teleconference rates than Telstra.
4. R. Sinclair will attempt to get people mentioned in Scuttlebutt (who are not members) to join ASL.
5. S. Josey will email members to get their permission to place their membership details on the web site.

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Advanced Notice

43rd Annual ASL Congress
University of Adelaide
30 November to 3 December 2004
More details in next newsletter – put the dates in your diaries now)

Did you miss all the fun and events at ASL in 2003?, then check out the web page for our roving photographers images (see the ASL Website Updates / Newsflash!)

One image however had to make it to the newsletter. A new section will appear in the June 2004 edition. Just email me with a suitable caption to the following image. The winner will receive a 'surprise' present from the Editor!

Protected Areas for Managing Rivers, Wetlands and Aquifers

As you know, the ASL representative reserves working group has produced a discussion paper, which is available free of charge on the web. The current version may be downloaded from http://www.users.bigpond.com/jon.nevill/FW_ProtectedArea_SourceBook.doc

The discussion paper has been re-titled "The Australian Freshwater Protected Area Resourcebook".

In order to encourage discussion of the issue, a small print run will be undertaken to produce hard copies for libraries.

If you think that it might be useful for your librarian to consider ordering a copy, could you download the order form from http://www.users.bigpond.com/jon.nevill/ResourcebookOrderForm.doc and pass it on to your librarian?

Individuals who wish to obtain a hard copy are of course welcome to place orders for the $35 book, however it is most important to place orders ASAP (before 10 March 2004) to be assured of obtaining a copy. A second print run is not proposed.

Regards

Jon Nevill

SCUTTLEBUTT, RUMOUR AND PRATTLE

River and Floodplain Ecology Research Group
Charles Sturt University

The academic year has just started and CSU is a hive of activity with new and returning students. During the summer our postgraduate students have been busy. **Ayesha Burdett** has finished all of her bug catching and counting and is now on to the serious number-crunching. Thankfully, it was a short field season this year so she didn't have to spend too much time under the hot summer sun. Preliminary analyses are showing some very interesting results, which will help to explain why aquatic insects live where they do. **Reuben Robinson**, the newest addition to the group, is preparing to start his PhD research looking at the use of remotely sensed imagery for monitoring the condition of riparian revegetation. He will be making comparisons between satellite imagery and airborne video imagery, and will look at the practicalities of each.

Andrea Wilson, recently appointed as a lecturer in biology with the School of Science and Technology, is heading back out to Umbango Creek to collect another year's data. She is using channel cross-sections, vegetation surveys and airborne video imagery to track the recovery of a highly degraded stream reach after rehabilitation works by local landholders. **Robyn Watts** is currently on sabbatical leave in Hobart collaborating with **Michael Askey-Doran** and **Michael Read** (Department of Primary Industries, Water and Environment) and **Professor Jamie Kirkpatrick** (University of Tasmania) on a project assessing the condition of riparian vegetation in the Little Swanport catchment. Robyn will visit approximately 45 sites in this catchment and will assess the condition of the riparian vegetation using the RARC (Rapid Assessment of Riparian Condition) developed by **Amy Jansen** and **Alistar Robertson**. The results of her surveys will be compared to information from vegetation surveys and habitat assessments previously undertaken in this catchment.

From

Andrea Wilson

AQUATIC ECOSYSTEM HEALTH UNIT, DEPARTMENT OF NATURAL RESOURCES, MINES AND ENERGY (NRM&E)

Since moving successfully from Rocklea to our new labs at Indooroopilly (thanks largely to the organisational skills of **Jaye Lobegeiger**), things have continued to change for the Aquatic Ecosystem Health Unit. The recent state elections (held on 7 February) saw the Department of Natural Resources and Mines absorb energy to become the Department of Natural Resources, Mines and Energy. We have also had a few staff changes, with people coming, leaving, on leave, or relieving.

Peter Negus has gone over to the Water Quality Unit, where he will be working on the National Action Plan (NAP) for salinity. **Michelle Winning** has been continuing Pete's work on the Fitzroy ROP with the assistance of **Toni Radcliffe**. Toni joined the AEH team late last year after working on the Ecological Health Monitoring Program (EHMP) with **David Moffatt**, and has been very busy in the lab identifying macroinvertebrates. **Kim Cheshire** has also departed and is now working for a consulting group in Brisbane. **Chris Thomson** has taken over her position in dealing with consultancy reports for NRM&E.

David Moffatt, Dean Holloway and **Susan King** are continuing their work on the Freshwater Ecological Health Monitoring Program being conducted across southeast Queensland. They successfully completed the Spring 2003 round of biannual sampling at 120 sites with the assistance of Griffith University, and are now preparing to conduct the Autumn 2004 sampling solo.

Satish Choy is currently on 6-months leave and **Jon Marshall** temporarily fills his position as unit leader. Jon attended a conference on Sustainable Futures for Australia's Tropical Rivers that was held in Darwin during February. He is also working on papers stemming from the CRCFE Dryland Refugia project.

Alisha Steward and **Annette Ritchie** attended February's taxonomic workshop in Albury and learned some of the finer points of invertebrate taxonomy. Satish and **Diane Conrick** represented NRM&E at the joint ASL/NZLS congress at Warnambool last December. Di also attended the Symposium on Urbanisation and Stream Ecology.

Jason Dunlop and **Nelli Horrigan** have commenced their work on the new salinity NAP with **Glenn McGregor**. Glenn ran a few workshops in December on toxic algal blooms. Both he and Jaye have been busy identifying this summer's load of blue-green algae samples, collected from throughout the state. **Marc Seifert** is working away on his PhD on the ecotoxicological effects of cyanobacteria on different organisms and has fieldwork scheduled for later in February.

Chris Marshall is still relieving at Water Planning, and will re-join the unit in six months. **Peter Hancock** continues to analyse the data from The Pioneer Groundwater Biota project.

Over the last few months, NRM&E has continued to place aquatic ecologists in our regional offices. So far they number 6, and include **Andrew McDougall** and **Marcus Finn** (Bundaberg), **Cath Thrupp** and **Craig Broadfoot** (Mackay), and **Tariq Khan** and **Minal Khan** (Goondiwindi). **Andrea Prior** and Di have been liaising with these ecologists, organising training sessions, assisting with enquiries, and helping with some of the more difficult taxonomic identifications. Andrea has also been busy organising this year's Science Retreat/Workshop to Stradbroke Island. The AEH unit, along with Regional Biologists and invited guests, will spend three days discussing contemporary developments in aquatic ecosystem sciences. The retreat will provide an opportunity to share recent experiences and research outcomes, with a view to ensuring the relevance and usefulness of AEH science.

From

Peter Hancock

WSL CONSULTANTS PTY LTD

WSL has welcomed a new member to our aquatic ecology lab. **Denise Betts** has been working in seasonal riverine waterholes in FNQ, and has joined us from her recent position at the Australian Centre for Tropical Freshwater Research at James Cook Uni. Denise will be familiarising herself with the temperate macroinvertebrate fauna, and has joined WSL just in time to get stuck into the autumn field season. We are really happy to have Denise join the team.

Dan Vertessy spent a few weeks in January tripping through Europe. Dan Vertessy was fortunate to have a lucky, but lonely friend, who won the holiday and invited Dan on a free trip. Since returning, Dan has amazed us with his knowledge of Polish architecture and the Berlin jazz scene. Dan has been working on an on-going Latrobe River impact assessment project, and has co-ordinated the fieldwork for the Melbourne Water biomonitoring network for 2003/04.

David Bryant has been running the mosquito monitoring project WSL is conducting for Melbourne Water. This project has extended Dave's knowledge of mosquito ecology, and with some help from **Philip Barton** of Deakin Uni, Dave has got on top of adult and larval culicid taxonomy. By the way, Dave's rebuilt mini is almost back on the road, two years after buying it for a slab of beer. All good things take time, hey Dave.

Patrick Maiden and **Cameron Amos** have been conducting a wetlands assessment for Hobart City Council. A tidal and a freshwater wetland were constructed with the original aim of remediating contaminated estuarine sediments, that had been dredged from the surrounding area and they have been neglected since construction. We are assessing the ecological condition, and about to prepare the management and maintenance plan for these systems. A relatively small project, this has been a great opportunity to work alongside **Donald Hine**, who assisted with the vegetation and hydrological assessment, and **Paul Manning** who is involved with the functional design of wetlands and management options.

We have also been continuing the work for **Pedro Schultz** at the Torrens and Patawalonga Catchment Board. Never a particularly exciting prospect in urban stormwater wetlands, Patrick and Cameron went sampling bugs, fish, sediments and water in some of the stinkiest ponds Pedro could find. Last field trip was a bit of a panic - luckily Pedro was home entertaining good friends in his speedos when we dropped past to leave traps with him and run straight onto the plane. **Dave Bryant** and **Patrick Maiden** will next be sampling the rivers and urban wetlands in early May.

Genvieve Hehir has been focussing on our macroinvertebrate ID work for DIPNR, specificially the Far West Bioindicator project being conducted for **Bruce Chessman**. Genevieve is maintaining her experience with NSW riverine taxonomy, and has commenced a review of the WSL voucher collection to ensure that our voucher collection is fully stocked. This involves verification of all specimens by the relevant taxonomic experts. The processing and QA/QC of the first batch of DIPNR wetlands samples has been completed.

We are also chugging away with our Vic EPA impact assessment projects for numerous water authorities. **Chris Bloink** has taken on a number of EPA compliance project reports, which will be a great opportunity to demonstrate what he and **Dan Vertessy** learnt at the PRIMER statistics course held at Monash in December. **Cameron Amos** and **Genevieve Hehir** also attended the taxonomy workshop held in Albury in early February. These workshops are always as valuable for the networking opportunity, as for the introduction to new keys, and it was a pity that more of us couldn't attend.

David Bryant and **Patrick Maiden** attended a course hosted by the EPA outlining the updated protocols for RBA sampling. It was good opportunity to discuss methodologies with other people doing the same sort of work, and swap ideas for equipment and processes in the field. We look forward to the online AUSRIVAS course, and to others in the team attending similar courses.

We were sad to see two of our limnologist colleagues leave us for new positions at the EPA. **Paul Leahy** has conducted diatom analyses for a number of WSL projects for 4 years, particularly an on-going impact assessment project in the lower Goulburn River. Paul had also joined **Gosia** in the Algology group and begun to conduct phytoplankton analyses. Our current projects that require diatom analyses are being continued by the gang at Diatoma, SA. Similarly, **David Kerr** has taken a new position in Freshwater Sciences unit at the EPA. David joined the macroinvertebrate lab after his honours year, quickly developing his taxonomic skills and knowledge of field sampling. We wish both David and Paul all the best, and promise to get the EPA back for stealing so many good aquatic ecologists from WSL.

From

Patrick Maiden

UNIVERSITY OF NEW ENGLAND, ECOSYSTEM MANAGEMENT

The new year has started vigorously with the arrival of Dr **Nerida Bleakley**, a postdoctoral fellow working with **Darren Ryder** on a project funded through the LWA National Rivers Contaminants Program. They will be exploring relationships between diffuse sources of contaminants (C, N, P, and suspended solids) and riverine productivity in the picturesque Murrumbidgee River.

We also welcome two new PhD students: **Emilie Warner** and **Ruth Harlow**, co-supervised by **Barb Downes**, who will undertake an ARC-Linkage project field-testing a novel framework for assessment of effects of changes in flow on structural and functional aspects of the Nymboida River system in response to the $120 million project to provide a water supply to meet the growing demand in the NSW North Coast area near Grafton. As a member of the Steering Committee, Barb has also been providing valuable input into the design of the integrative research project assessing the responses to wood introduction and riparian replanting of an 8-km stretch of the Hunter River described last year. All of us are waiting with bated (baetid?) breath for the introduction of the wood in specially-designed snags for fish in mid-stream and various bank and channel permutations aimed at increasing channel complexity and altering subsurface flow paths. **Steve Thomas**, a post-doc from Cornell, has been visiting our group in February and spending some warm days on the banks of the Hunter River assessing relationships between surface and subsurface uptake and retention rates, nutrient availability and ecological stoichiometry.

Canran Liu, ex-Oxford, will join us shortly as another postdoctoral fellow who will be the GIS-based ecological modeler working with **Paul Frazier**, **Lalit Kumar**, **Dorothy Bell**, **Darren Ryder** and other members of the research centre North Coast Aquatic Linkages (NCAL) as they tackle methods to provide an inventory of North Coast wetlands that matches function as well as structure. The intention is to assess effects of changes in water regime of wetlands whose floodgates have either been removed or are about to be removed to promote estuarine fisheries.

Several Honours students are commencing projects with us this year: **Tom Patterson** (Environmental Engineering), **Tony Townsend** (Ecology) and **Debbie Burgis** (Natural Resource Management) are going to assess biofilm and invertebrate conditioning of various types of fishway, and how field exposure and algal growth affect flows in the fishways and their use by native fish; **Pam Brook** is tackling a project on the changes in organic matter dynamics wrought by riparian rehabilitation and clearing of exotic privet from the banks of the Never Never River; **Jill Scealy** is working on aquatic macroinvertebrate microhabitat use in the Hunter River and how this might change in response to wood introduction; **Kristy Munro** will assess the likely impacts of new housing developments planned on the coastal stream Woolgoolga Creek; and **Gus Macrae** is working on fish dynamics in the Macquarie Marshes. As results of these projects accrue, we'll keep you posted. We'll also give you details on the exploits of the other postgraduates and extend warm congratulations to **Peter Hancock** who has submitted his PhD.

From

Andrew Boulton

THE MURRAY-DARLING FRESHWATER RESEARCH CENTRE

The 15th MDFRC/CRCFE Taxonomic Workshop was held at Lake Hume Resort on 10 and 11 February. Approximately 60 participants from south-east Australia heard from nine speakers on how to identify lacewings and spongeflies, fairy shrimps, freshwater mussels, adult and larval dragonflies and damselflies, caddis fly larvae and fish larvae. Six specialist identification and ecology guides were released during the workshop, taking the total number of guides released over the past 15 years to 51. The published guides were:

Theischinger G. and Hawking J.H. (2003). Dragonflies of Victoria. An identification guide to adult and larval dragonflies (Odonata). CRCFE/MDFRC Identification and Ecology Guide Series, No. 46.

Timms, B.V. (2004). An identification guide to the fairy shrimps (Crustacea: Anostraca) of Australia. CRCFE/MDFRC Identification and Ecology Guide Series, No. 47.

Serafini, L.G. and Humphries, P. (2004). Preliminary guide to the identification of larvae of fish, with a bibliography of their studies, from the Murray-Darling Basin. CRCFE/MDFRC Identification and Ecology Guide Series, No. 48.

New, T.R. (2004). Introduction to the systematics and biology of Australian Aquatic Neuroptera. CRCFE/MDFRC Identification and Ecology Guide Series, No. 49.

Dean, J.C., St Clair R.M. and Cartwright, D.I. (2004). Identification keys to Australian Families and Genera of Caddis-Fly Larvae (Trichoptera). CRCFE/MDFRC Identification and Ecology Guide Series, No. 50.

Walker, K.F. (2004). A guide to the provisional identification of the freshwater mussels (Unionoida) of Australasia. CRCFE/MDFRC Identification and Ecology Guide Series, No. 51.

For information on the guides, please email: enquiries@alb.clw.csiro.au or phone the MDFRC on (02) 6058 2300.

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As a lot of you would be aware, the MDFRC at Thurgoona is moving over to the campus of La Trobe University (Wodonga) in February next year. We'd like to extend an invitation to any past staff member who has worked at MDFRC to a "Beat the Retreat" party to be held in mid-June (dates to be confirmed). Please contact Rhonda.Sinclair@csiro.au, if you would be interested to receive additional information. Promises to be a great time to catch up with a lot of folk.

From

Rhonda Sinclair

CENTRE FOR ECOSYSTEM MANAGEMENT, EDITH COWAN UNIVERSITY

Mark Lund and six students from ECU attended the last ASL Congress in Warnambool. **Pierre Horwitz** would have attended but missed the cut off deadline. Things have been busy at ECU, with **Sandra Hall** (MSc) and **Surasithe (Pao) Khwanboonbumpen** (PhD) working on their theses related to urban stormwater drainage. **Bea Sommer** (PhD) is working on analysing the results from her experiment looking at the effects of drying on iron in wetland sediments. **John Bunn** (MSc) is threatening to submit his thesis on the Hairy Marron soon. **Yuden** (MSc) has completed the fieldwork on her mesocosm experiment looking at using organic matter to ameliorate acidity in old coal mine lakes.

Michael Roberts completed his Honours thesis on nuisance midges in Lake Joondalup and is currently looking for work. We welcome **Michelle Cumbers** to the group, she will be looking at the nutrient status and budgets for Lake Joondalup. In addition to continuing to complete his PhD write-up on a risk assessment of magnesium sulfate from Ranger Uranium Mine with the Environmental Research Institute of the Supervising Scientist (***eriss***) in Kakadu National Park, **Clint McCullough** has just joined the ECU Centre for Ecosystem Management as a research fellow. As a member of the inter-institutional Centre for Excellence Sustainable Mine Lakes (CSML), the research focus with this new position is still on the environmental effects of mining; however, this time with a particular focus on the use of constructed wetland to bioremediate Acid Mine Drainage (AMD) issues in the void lakes of the Collie coal mining region. Finally, **Mark Lund** continues his work on the risks posed by irrigation return on the Ord River, research with CSML and on midges in Lake Joondalup.

From

Mark Lund

POSTCARD FROM TIM DOEG

With all due respect to Modellers and Statisticians .....

OK, so my maths isn't very good. 5000 new macroinvertebrate wetland species actually comes to a value of $3,081,450,000 (not $1.1 trillion - see postcard from last issue).

But I've always hated maths - but I've always hated statistics more.

It began with my very first "real" job, in the year off between finishing the BSc and doing Honours (OK, I admit it. If my memory serves me correctly, it was 1978). I worked with the Department of Agriculture on a project looking at the impact of a mosquitocide on non-target macroinvertebrate taxa in a swamp in Shepparton, Central Victoria (remember that, Leon Metzeling). Apart from the field expenses, which we weren't allowed to have as cash, but had to spend - mainly at the motel restaurant - the lobster was particularly nice - it was my first real encounter with formal statistics.

We designed the experiment - paired plots and all, one side treated with the pesticide and the other left as a control. We dosed the treatment plot with a fixed amount of pesticide and sampled both sides at various intervals. After sorting the samples, it was obvious that the numbers of chironomids in the treated plots were much lower that the number in the control plots - well, in all of them except for one pair. But it was pretty obvious that a closely related species to the mosquito had been affected.

So we took our data to the Department's statistician (remember the days when a government department actually had a statistician) and waited for the results. I think he had to punch cards or something, but about a week later he came back and said, "No, there is no significant impact of the treatment". The level of significance in the one-way (or was it a two-way) ANOVA was about 0.0501, so we couldn't say that there was an effect.

How silly was that! The "bleeding obvious" statistical test (look at the numbers) didn't match the formal statistical test. It was the first time that statistics seemed a bit daft.

> *Aside*: I hate to think what happened after that. I can imagine the swamps being dosed with this stuff on the advice/conclusions of this study. There would have been mass mortality of chironomids because of the obviously silly statistical result (..... oh, maybe not such a bad thing).

The next year (1979), during Honours, I sampled the bug fauna of rocks in the Acheron River. About 8 trips, including sampling in snow. Collected lots of data on bug numbers, diversity, rock type, depth, flow, rock size, algal cover and a whole stack of variables to see what might determine what lives on the rocks and why. Correlate everything in sight, pick out the significant ones and see if you can explain the relationship. It all seemed to make sense.

The "bleeding obvious" test suggested that the diversity and density of some taxa were often significantly correlated with depth, current and algal cover. It was only during the final Honours seminar (a few weeks before handing in) that the department's statistical "expert" popped up with "No, you can't do that ..... Type I and Type II errors .... Go away and do multivariate analysis."

OK, fair enough. In those days, you could learn multivariate statistics in a week. I think the only thing around was **Principal Component Analysis**. So after a torrid week of learning and data crunching, I came up with the results that diversity and density of some taxa were significantly correlated with PC Axis1 or PC Axis2 or something. Whatever that meant? PC Axis1 had something to do with depth or current or algal cover (or all three, but only part of each), so what does that tell you? Seemed to tell me nothing more than the correlations. Oh well, at least the statistics were valid. Judging by the result, the examiner completely misunderstood the brilliance of the thesis (but don't they all?)

Things moved fast from there in the statistical world. In my next job (1981 - 1980 was spent in a bar in London, if my memory serves me correctly), I looked at the fauna of the Mitta Mitta River when they did their first irrigation release from Dartmouth Dam. By then, we had **DECORANA** to analyse the community results. Seemed pretty simple and obvious - take an n-space data matrix of species and sites, crunch it though a CORANA, and squash it down into 2 or 3-dimensions so it can be graphed. At least you still had to interpret the graph based on a "bleeding obvious" test. At last, this seemed to be good stuff - until you read about the de-trending (the DE bit of DECORANA).

Apparently, when you apply the Correspondence Analysis (the CORANA part), the statistics produces a little artefact where the output sort-of curves a little (if you put a straight line of points in, you get a curve of points out - or something like that). This was a side effect of a quirk in the analysis. What the DE bit does is change the result so you get all the points back into a straight line. So, get the results, then apply another bit of trickery to make the data fit what the statistics should look like. No wonder DECORANA didn't last long.

> *Aside*: Now, if you found that an analysis produced this type of artefact, and had to be manipulated by some trickery, you'd think that you would go away and devise a new type of analysis without the artefact. Wouldn't you?

And then it got worse! With my confidence shaken in all matters statistical, I went to a conference in Canberra on statistical treatment of biological data (about 1984 I think). Everyone was going stats and models mad, and I had to try to learn more. By then, **GLIM** was all the rage (Generalised Linear Model). I won't even pretend to understand it, but came home from the conference with only one memory - leverage.

They were going through some example data. Apparently GLIM tries to fit data into some sort of linear thingo. You develop some sort of model .... and .... er .... well, you put the data through the computer, and it tells you something (actually about 3 output pages of densely packed numbers). What this example showed was that there was one point that didn't seem to fit the model very well.. It was off to the side - an outlier.

To me, this seemed like an interesting point. What was going on there? why is it so far off the line? That point just might tell us something we didn't know about the ecology of the system.

According to the statisticians, this was a point of high leverage. It was having a severe effect on how the data was fitting into the model. The best way to treat points of high leverage was - and this was their advice - to delete them! If it doesn't fit the model, there must be something wrong with it, so toss it out.

And so began the phase in statistics where actual data became a liability. The less you collect, the easier it is. The less likely it is to conflict with the statistical model. But without actual data, how can you possibly do statistics?

The answer is - you generate it yourself. This lead to the idea of **Bootstrapping**. Take a couple of data points, feed it into a computer program and, voila, you have all the data points you need. No problems with leverage (you can set the bootstrapping program to avoid that). No problem with extensive and expensive data collection. Do what you can in the time and budget, and let bootstrapping take care of it. You'd have to feel confident relying on results from that sort of process, wouldn't you?

MDS is sort of like that. A funny sort of concept, like DECORANA, it take an n-space data matrix of species and sites and crunches it down into 2 or 3-dimensions. It initially places all the points randomly in a 2 or 3 dimensional matrix, and over many iterations, gradually moves them to the "best" configuration. But oddly, the result you get often depends on where you start the random configuration. There are actually a number of possible results that are "best". So it does it over and over again, until one result becomes more common that others. And that is the result you see on the PowerPoint slide, or in the journal article. Confident? You should be, MDS gives you a stress index (now there is an aptly named statistical output, at last).

> *Aside*: Now, you'd think that if the answer depends on where you start, something is wrong with the analysis, and they would go away and devise a new type of analysis without the problem. Wouldn't you?

And we can now tell if one set of points is different to another set of points. If, like me, you see these clouds of different coloured points on a graph presented at a conference and they kind of look like more of one colour are sort-of off to one side, but in the main, most of the points seem to mingle in the middle somewhere - you will always be surprised that they are statistically different.

But now we have almost finally reached the ultimate statistical method. It seems to do away with the need to collect actual data completely. **Bayesian statistics** relies on expert opinion. Get a few experts together, work out what they think should be running the system (call it a "conceptual model"). Then take a number (anything - diversity, abundance, dissolved oxygen) and estimate how much you think it will change if you do something (add water, take away water, plant riparian vegetation). And then estimate how confident you are in your guess, and output a cloud of potential answers, and ..... Help!

Paul Simon once sang a song with the line "Every generation throws a hero up the pop charts." I wonder where we will go from here? What hero will the next generation of statistics throw up? Unfortunately, I think I know. Let's get a cloned piece of Sam Lake's DNA, attach it to some Terminator III type cyborg, then plug it though a **Neural Network**, which has learnt from the last time you tried to get the thing working and ..... bugger it, we're all going to be out of a job.

Tim Doeg

Note new email address:
crowdoeg@optusnet.com.au

A BIT OF FUN ~ KEEP THOSE LETTERS COMING !!

Ask Onmil all the tricky limnological etiquette questions you really want answered!!

Dear Onmil

Help! I am setting up a monitoring program. What should I do?

Sincerely

D. S. Aster

****

Dear D. S.

Let me explain the difference between etiquette and protocol.... Protocol includes etiquette only if you're in the diplomatic corps or at court (as in royal, not as in being prosecuted). You are unlikely to be monitoring in that situation.

Etiquette covers the conventional requirements in social behaviour or accepted standards and practices in certain professions. You are also unlikely to be monitoring that. Well, not physico-chemical parameters, anyway....more likely animal behaviour.

So, don't ask me about monitoring, ask a limnologist! They'll tell you what bits of the aquatic universe you should sample. And how often. And where to sample. And where to put it when you've done the sampling [1]. Mind you, a traditionalist will tell you to monitor physico-chemical parameters. A microbiologist will tell you to monitor algae. A benthic microbiologist will tell you to monitor biofilms. A macrobiologist (?) will tell you to monitor macroinvertebrates. A botanist will tell you to monitor plants. A piscologist (or is that a piscatologist? No, surely that's someone who studies fish poo!) will tell you to monitor fish. An ornithologist will tell you to look at birds. And an ecologist will tell you to monitor ecosystem functioning. And, best of all, D. S., they are all correct! Never before, in the course of human endeavour, have so few been advised by so many.

And don't forget to talk to a statistician about data analysis. Mind you, if he or she [2] talks back, you won't understand one word in ten, but at least you tried. Was it something about the multi-dimensional discriminate function analysis, or was it functional regressions as input to multi-variate indiscriminate models.....?

Now, all you need is a sum of money approaching the infinite, and you can have a fine monitoring program. What, resources are limited? Welcome to the real world! I've just one word - focus [3]. Define your objectives, D. S. Mine was to afford to retire at 40.....and, I'm afraid, monitoring hasn't helped in the least. You may have better luck!

Sincerely

Onmil

1 it's called archiving....what did you think I meant?
2 just to be non-sexist, but you'll find the vast majority of them are, in fact, he
3 (what, both of us?)

INFORMATION FROM AND FOR MEMBERS

Please Refer to the ASL Website Updates / Newsflash! Section

ABN: 72 002 880 864

Environmental Defender's Office Ltd

Level 9
89 York Street
Sydney NSW 2000
DX 722 Sydney
Email: edonsw@edo.org.au
Webpage: www.edo.org.au

Tel: (61 2) 9262 6989
Fax: (61 2) 9262 6998

Dr Richard Marchant
Secretary
Australian Society for Limnology

23 February, 2004

Dear Dr Marchant,

The Environmental Defender's Office (EDO) is a non-profit community legal centre, specialising in environmental law. We give free legal advice to the community, and provide legal representation for cases that are in the public interest. We often require expert technical and scientific assistance for complex cases. We are currently compiling a register of experts willing to provide technical or scientific advice on a pro bono basis to assist in public interest environmental cases.

Members of the Australian Society for Limnology would make a significant contribution to the register. For members interested in community involvement it is a formalised way to participate in public interest environmental matters. We do not ask much of the experts who join the register. We distribute requests for assistance fairly between experts, so most will only be asked to help about once a year or less. Most matters will only involve a few hours work. Expert assistance will normally be limited to reviewing part of a document and providing written advice, but occasionally there may be an opportunity to appear as an expert witness in court.

Having joined the register, experts are under no obligation to assist in any matter. Experts always have the option of declining to assist, or of being removed from the register.

We would be grateful if you could circulate this letter and the attached material to your members who may like to join our list of experts (Note from the Editor: the Frequently Asked Questions and Registration Form are on the ASL website for members who wish to pursue this further. If you need further information please contact me.

Yours sincerely,

Dr Scott King
Scientific Advisor

Email: scott.king@edo.org.au

The 3rd Ramsar Manual

From The Ramsar Bulletin Board, 17 December 2003, http://www.ramsar.org/w.n.html

Pre-publication version of the 3rd *Ramsar Manual.* When the *Ramsar Manual* was first compiled by T. J. Davis and published in 1994, it was enthusiastically welcomed as an essential *vade mecum* through the sometimes bewildering world of Ramsar resolutions, guidelines, and terminology. A second edition was published in 1997, incorporating all of the institutional changes of the preceding three years and including all of the Convention's major documents at that time. Then, in view of the subsequent publication of the 9-volume "Ramsar Toolkit" (*The Ramsar Handbooks for the Wise Use of Wetlands*), the *Manual* seemed less useful and was let go out of print. Since then, however, many people have argued that there is still a need for a brief, printed introduction to the Convention and its processes, and a new, updated third edition has now been prepared which will be published on CD-ROM in early 2004 as an adjunct to the new 14-volume 2nd edition of the *Ramsar Handbooks* series.

The pre-publication final English draft of this new *Ramsar Manual* is now available on the Ramsar Web site in HTML and PDF versions, and comments are invited as to improvements or additions that readers might like to see made to it, see ramsar@ramsar.org

New President for the Murray-Darling Basin Commission

The Rt Hon Ian Sinclair AC has been appointed as the new President of the Murray-Darling Basin Commission. Mr Sinclair (Eds note: No relation) has a strong rural background and a long, distinguished parliamentary career. He replaces Dr Roy Green AO, whose term as President expired on 30 November 2003.

Mr Sinclair will be responsible for ensuring the decisions for a healthy River Murray are based upon well-informed scientific, economic and social analysis, on which the Basin community has been properly consulted.

His appointment is for five years. For more information read the media release at http://www.affa.gov.au/ministers/truss/releases/03/03354wt.html

Community Forum on The Living Murray "First Step" Decision

On 10 December, the Community Advisory Committee (CAC) of the Murray-Darling Basin Ministerial Council hosted a forum which attracted 125 Basin community stakeholders and leaders. The purpose of the forum was to explain The Living Murray initiative "First Step" decision and to agree on a process for community involvement.

An essential part of the First Step decision was the agreement that a "comprehensive, responsive and accountable community engagement and communications strategy" be developed. The Murray-Darling Basin Commission is to develop the strategy.

The CAC wanted to gather a wide community view on the essential characteristics of the strategy, namely informing communities, seeking input from them, and involving them in planning and implementing the First Step.

Forum participants developed a communiqué which commended the Ministerial Council on taking the First Step decision, presented key community issues, and made several recommendations for consideration in developing and implementing the strategy on communication and engagement.

"With all our diversity, we share a common interest in engaging with each other and with government. 'Community engagement' (like dancing) requires contact, communication, leadership, responsiveness, goodwill and shared direction," the communiqué said.

"It also requires all partners to 'listen to the music' and keep in time. If this Community Engagement process is to succeed, government and community partners must genuinely commit to these principles."

The full text of the forum communiqué is available at http://www.mdbc.gov.au/about/cac/cac.htm

New Version of MDBC Salinity Atlas Now Online

The MDBC has recently completed an updated version (2.2) of the Murray-Darling Basin Irrigation and Salinity Mapping (BISM) Atlas. The atlas is a collection of salinity related irrigation data, such as irrigated areas, drainage catchments, groundwater pumps, evaporation basins, etc on a GIS platform.

The scope of the study has now extended beyond mapping the engineering works and drains called for by the MDBC Salinity and Drainage Strategy, to include other elements of land and salinity management, which are included in the new Basin Salinity Management Strategy.

The data was previously compiled into an atlas of data and distributed to government departments, irrigation trusts and regional groups throughout the Basin.

This information helps the MDBC and its partner governments (Australian, South Australia, Victoria, New South Wales, Queensland and ACT) to manage salinity issues associated with irrigated agriculture in the Basin. This year the atlas of maps is available electronically on the MDBC website. It includes information on irrigation infrastructure, groundwater salinity and groundwater flow systems.

To view the Atlas, go to http://www.mdbc.gov.au/naturalresources/salinity/atlas/bism.htm

Community Involvement Urged For Major New Wetlands Survey

The River Murray Catchment Water Management Board is calling on the community to become involved in a major new physical and biological survey of 38 wetlands along the River Murray.

The project, which has important implications for the future management of the wetlands, is a partnership between the River Murray Catchment Water Management Board, Department of Water, Land and Biodiversity Conservation, and the riverine Local Action Planning Committees.

The project will be launched at Swanport Reserve at Murray Bridge on 31 January and will include a free breakfast and monitoring activities. "Community involvement is crucial to the success of ongoing wetland management and monitoring. This project will provide volunteers with the opportunity to become familiar with collecting wetland data such as physical features, water quality, groundwater quality and depth, vegetation, fish, birds, frogs and macroinvertebrates," says Project Coordinator Peter Waanders.

"The information collected during this survey will help managers improve the River Murray wetland environments by giving them a better understanding of existing conditions and the future needs of the systems.

"The community can also become involved by attending other special workshops and information sessions, field days on collecting techniques and eventually briefing sessions on the findings of the survey," he said.

Carried out by staff of Sinclair Knight Merz and the Murray-Darling Freshwater Research Centre (Lower Basin Laboratory) the baseline survey's main aims are to:

* establish basic knowledge of the existing condition of 38 wetlands;
* assess priorities for future management; and
* identify threatened wetland species and/or communities for protection.

MDBC Publications Online

Did you know there are some 1000 publications available through the MDBC website at www.mdbc.gov.au ?

Some of the categories include:
* animals and plants;
* general Basin information;
* salinity;
* soil;
* water;
* natural resources management; and
* people and industry,

There are also lots of posters, maps, brochures, fact sheets, technical reports, research reports, magazine articles, school resource kits and more. Many of the titles are free while others can be purchased online. For a world of Basin information go to http://publications.mdbc.gov.au/

River Murray Youth Teach Key Water Allocation Lessons

Hundreds of Australian and overseas students and teachers recently took a lesson in water allocation from members of the South Australian River Murray Youth Council.

The Council members gave the lesson at the International River Health Conference held in Mildura during National Water Week in October. The conference attracted 450 students and 210 teachers from around Australia and from 14 overseas countries.

The River Murray Youth Council staged a workshop on environmental flows looking at how water is allocated throughout the Basin for domestic usage and irrigation. They covered the key messages of ensuring enough water for the environment and the ecological importance of the Murray Mouth.

The group used an imaginative concept of a train to represent water flow and supply. Students taking part in the workshop were required to get off the train when water was allocated to irrigation or domestic use. The train demonstrated how water is allocated to various uses within the Basin and those participating saw the overall effect of there not being enough flow for the environment. Teachers attending the workshop said they were interested in using the concept themselves in their own classrooms back home.

The Youth Council, which was set up two years ago, by the River Murray Catchment Water Management Board is headed by an elected Chair - Sara Bray a year 11 student from Karoonda Area School.

How Old is that Cod?

Researchers at the Murray-Darling Freshwater Research Centre's Northern Laboratory in Goondiwindi have started a study into the biology of Murray cod in local river systems. The study is particularly aimed at unravelling how fast these fish are growing in our waterways and at what age they are beginning their reproduction.

The project, led by Dr Glenn Wilson, Scientist In charge at the Goondiwindi Laboratory, will use annual growth rings laid down in the ear bones or 'otoliths' of Murray cod to age these fish. "By combining this information with other details such as the length and total weight of the fish, an idea of its growth rate can be gained."

"Although we encourage the release of Murray cod back into our waterways by anglers, we do realise that some are kept to eat" Dr Wilson says. "It is a bonus if we can use these same fish to improve our knowledge of this iconic native species." "As we are working with the otoliths, we only require the head of the fish to extract these bones, a process which does not affect the head if it is to be mounted as a trophy" Dr Wilson explains. "In addition to the head, anglers are encouraged to provide us with details of the length, sex and total weight of the fish, plus note which river the fish was caught in."

Fish to be used in the project will predominantly come from local anglers. Importantly, specimens have already been donated by fishermen from across the Border Rivers and Balonne river systems, including fish up to 70 lb.

For more information or if you wish to become involved with this important research, the laboratory can be contacted on (07) 4671 4650, 0429 837 082 or gwilson@northernlab.net.au.

New CRC Technical Report - Land-Use Impacts on Rivers Program

A new report just published adds to the knowledge of the gap between the science of catchment water balances and the management of rivers.

Part of a series on the subject, the new report is published by the Cooperative Research Centre for Catchment Hydrology. Written by Pat Lane, Alice Best, Klaus Hickel and Lu Zhang the report tackles the impact of afforestation on flow distribution throughout the year.

The simple fact that trees use more water than grass has important implications for managing dryland salinity and changes in river flows.

Until recently, the data analysis and predictive tools only allowed confidence in predictions concerning river flows on a mean annual basis. This has limited the use of the science in the day-to-day management of water resources and catchment planning.

Afforestation and water will remain a contentious issue until the hydrologic impacts are clear for a complete range of environments and timescales. Printed copies are available for purchase from the Centre Office. For more information, contact virginia.verrelli@eng.monash.edu.au on 03 9905 2704.

'Critter Catalogue'

The South Australian EPA is in the final stages of producing a community-level guide to macros entitled 'Critter Catalogue: a guide to the aquatic invertebrates of South Australian Inland Waters'. John Bradbury is doing the illustrations for us and we are short two specimens-- a decent example of a freshwater sponge (Porifera, family Spongillidae) and a genuine water spider (Arachnida, family Pisauridae). If you have a good specimen of either of these that I can borrow (probably for 4-8 weeks) please drop me a line.

Sam Wade, Senior Environmental Scientist, Industry Monitoring Assessment, Division of Monitoring and Evaluation, Environment Protection Authority; Email: sam.wade@state.sa.gov.au

Spotlight on Sustaining Australia's Tropical Rivers

As Australia celebrates World Wetlands Day on 2 February, tropical rivers and their sustainability will be scrutinised at a scientific forum in Darwin.

The role of science in managing tropical rivers - including wetlands, estuaries and coastal ecosystems - is the focus of discussion and debate for scientists, natural resource managers, and industry and community leaders gathering at Charles Darwin University from 1-3 February.

Australia's greatest river systems lie in the northern half of the continent. In fact, according to Forum Organiser Dr Peter Gehrke, tropical rivers nurture some 70% of Australia's water resources.

"These resources are going to look progressively more attractive as time goes on: the Murray-Darling Basin and other systems in the south are under considerable pressure, and there is a great desire for development in the north at the moment - boosted by the opening of the Adelaide to Darwin rail line.

"We have an opportunity to do it right - to build a sustainable future for our tropical rivers, avoiding past mistakes and looking to science for management options," he says.

The Forum will cover the whole river system, examining catchment land-use and the impacts of irrigation water extraction as well as fisheries on the functioning of tropical rivers, their wetlands, estuaries and near-shore environments.

"With increasing social, political and business interest in the water resources of northern Australia, we need to be proactive in assembling, distilling and leading the science."

"This is critical to understanding and managing the long term health of Australia's tropical river systems."

The forum, which has been sponsored by Land and Water Australia, CSIRO Land and Water and the Australian Government Department of Agriculture Fisheries and Forests, will bring together existing knowledge and identify important knowledge gaps in order to provide a launch pad for future studies.

"We intend to develop an integrated perspective of rivers, estuaries and near-coastal systems, spanning tropical Australia from Broome to Rockhampton", says Dr Gehrke.

The media is invited to attend the morning session on Monday 2 February, which will begin at 8.45am with Dr Gehrke's welcome address followed by an introduction at 8.50am by the new Charles Darwin University Vice-Chancellor Professor Helen Garnett. Topics to be covered that morning include 'Present and future use and management of tropical rivers' and 'Aquatic ecosystem assets and threats to tropical rivers'.

FASTS

Science like 'a gently pricked balloon' 12 January, 2004

Science in Australia is still afloat, but only just.

Scientists today compared it to a pricked balloon, slowly losing height and being easily outstripped by the efforts of other countries. While funding initiatives in Australia over the last few years have been welcome, they have not been enough to retain our position in the international race to forge a modern economy.

Professor Snow Barlow, President of the Federation of Australian Scientific and Technological Societies (FASTS), said that other countries were racing past Australia by increasing their funding for science and research.

"Only a substantial injection of new funds can solve the problem," he said. "The Government has an ideal opportunity when it announces plans for a successor to Backing Australia's Ability."

He said that Australia gets top marks for the ingenuity of its researchers, but ingenuity cannot match the new investment other nations are pouring into the field.

"There seems to be a national failure in Australia to realise the urgency of the situation," he said. "It's as though we have taken an extended holiday from reality."

Professor Barlow pointed to plans of other countries to lift their research ability, with Europe, Japan, the USA and Canada all determined to make significant investment in their research and education base. "The European community has set a target for investment in research to reach 3 per cent of GDP by 2010. We are currently investing about half that amount, and ultimately this is going to tell," he said. "You can do things on the cheap for only so long."

He said the increase of permanent departures from Australia of young and talented people was symptomatic of the lack of investment in science and research. "Permanent departures from Australia have increased by 146 per cent since the early nineties," he said.

"Not all these people are scientists, but scientists will be well-represented in the highly qualified young professionals fleeing overseas to find better pay, better facilities, more modern equipment and greater career opportunities."

Professor Graeme Hugo's report on brain drain, released on December 18, showed that one in twenty three Australians lived overseas, nearly twice the rate of Americans living overseas.

"In the most part these are highly qualified young professionals, exactly the sort of people Australia needs to retain.

SCIENCE NEWS 5 JANUARY 2004

FEDERATION OF AUSTRALIAN SCIENTIFIC AND TECHNOLOGICAL SOCIETIES

Science and Technology for the Social, Environmental and Economic Benefit of Australia

1. Bradley Smith appointed new Executive Director, FASTS

We welcome Bradley Smith to FASTS. He will start work at the Dome on 2 February 2004 as Executive Director. Bradley was formally a policy advisor on the staff of the leader of the Australian Democrats, where his main portfolio responsibilities were higher education, science and biotechnology, R&D and innovation.

He successfully negotiated improvements to more than 30 bills and regulations affecting science and technology including the R&D Tax Concession in 2001, the Research Involving Human Embryos Act and the Australian Research Council Act.

Before that, he was the President of the Council of Australian Postgraduate Associations (CAPA) and a doctoral candidate in the history and philosophy of science.

Bradley says that he relishes the opportunity to assist FASTS to build on its achievements, to further strengthen the organisation and enhance its capacity to successfully influence Government, media and community understanding and support of science and technology.

2. Top Ten Policies for 2004 announced

2004 is an election year, and FASTS is encouraging the Australian Government to bring on *Backing Australia's Ability (II)*. This is our most important policy object.

In 2001 the Australian Government announced the $2.9 billion *Backing Australia's Ability* investment package to boost Australia's research and innovation capacity. This was a positive step, and one essential for the nation's future prosperity and well being.

Most of the investment through *Backing Australia's Ability* is set to end in 2006. After the many reviews conducted in 2003 into Science and Innovation, the government should be ready to announce *BAA (II)* in this year's budget.

FASTS has previously applauded the Government's investment in *Backing Australia's Ability* which, following the key contribution of Chief Scientist Robin Batterham, supported by FASTS and other organizations, brought about a sea change in Australia's investment in science and technology.

However Australia still lags behind most of our OECD competitors in terms of investment in research and innovation. The European community has recently set a target for investment in research of 3 per cent of GDP by 2010, and the US and our other international competitors are moving in the same direction. Australia is currently investing about half that amount. We need a national strategy to boost this investment in the next stage of *Backing Australia's Ability (II)* to remain competitive.

FASTS Ten Top Policies for 2004

1. BRING ON "BACKING AUSTRALIA'S ABILITY (II)

BAA was a first step to invest in Australian science. It's time to take the second step and increase our national investment to match the OECD average.

2. RETAIN OUR BRIGHT YOUNG RESEARCH SCIENTISTS

Recent science graduates have plenty of employment opportunities, but postdoctoral researchers have run into a career bottleneck. The best ideas will flourish if BAA (II) creates attractive career opportunities in research and industry.

3. PhD SCIENCE GRADUATES TO INVIGORATE INDUSTRY

BAA (II) should provide matching Government funds to employ new PhD graduates in industry for 2 years, to bring fresh scientific ideas for new methods and new products, and to forge science-based industry career paths.

4. ENCOURAGE INDUSTRY TO BE MORE INVENTIVE

Give increased tax breaks on a sliding scale to reward companies prepared to increase their investment in research, because enterprising and inventive companies grow and provide more jobs.

5. ATTRACT VENTURE CAPITAL INTO NEW INDUSTRIES

Venture capital is in short supply. Make it more attractive to invest in new ideas and new industries that have long term payoffs by lowering capital gains tax for long term investments.

6. NOW WE HAVE THE MAP, AUSTRALIA NEEDS A COMPASS

The National Mapping exercise has shown us where we are. We should create a plan for up to 10 years into the future that sets goals and national directions, including national action plans on limiting climate change and on sustainable energy strategies.

7. HECS BREAKS FOR SCIENCE AND MATHEMATICS TEACHERS

Science and maths teachers are in short supply in Australia, but they pay higher HECS fees than other teachers and thus take home less pay. Bring in HECS breaks for science graduates when they take on teacher employment.

8. COLLABORATION, NOT COMPETING SILOS

Destructive competition between separate research organizations for the funding dollar limits research outcomes. Provide more collaborative funding incentives to build on the different strengths of universities and Government funded research agencies.

9. QUALITY SCIENCE GRADUATES

Quality science and technology graduates are vital to Australia's economic and environmental future. We need measures to ensure that the new Higher Education funding arrangements help reverse the current decline in Higher Education science enrolments.

10. WE ARE NOW 20 MILLION AND GROWING

Australia is a fragile continent with an expanding population. We need to develop a scientifically based population strategy that takes into account limits to growth determined by, for example, water resources and soil salinity.

These issues will form the core of our policy priorities in this election year.

3. FASTS Calendar for 2004

The main events in the FASTS calendar for 2004 are shown below. The most important are the Science Meets Parliament days, the Board meetings and the release of our policy and election documents.

Date	Function	Venue/time
15 January	Exec Meeting	FASTS office
23 January	Copy to ED for Newsletter	
30 January	Release of Newsletter	
3 February	Exec meeting	FASTS office 8.30 am
	February Media Release	
3 February	New ED starts	
2 March	Exec meeting	FASTS office 8.30 am
	March Media Release	
18/19 March	*Board Meeting on 19th*	*Melbourne*
6 April	Exec meeting	FASTS office 8.30 am
	April Media Release	
23 April	Copy to ED for Newsletter	
30 April	Release of Newsletter	
4 May	Exec meeting	FASTS office 8.30 am
11 May	Budget/Media Release	
1 June	Exec meeting	FASTS office 8.30 am
	June Media Release	
6 July	Exec meeting	FASTS office 8.30 am
	July Media Release	
23 July	Copy to ED for Newsletter	
	Release of Policy Document	
30 July	Release of Newsletter	
3 August	Exec meeting	FASTS office 8.30 am
10/11 August	**Science Meets Parliament**	
	Release Election Policy	

Date	Function	Venue/time
12 August	*Board Meeting*	*Canberra*
	August Media Release	
7 September	Exec meeting	FASTS office 8.30 am
	September Media Release	
5 October	Exec meeting	FASTS office 8.30 am
	October Media Release	
23 October	Copy to ED for Newsletter	
30 October	Release of Newsletter	
2 November	Exec meeting	FASTS office 8.30 am
15/16 November	*AGM/Council/Board Meeting*	*Sydney*
	November Media Release	
7 December	Exec meeting	FASTS office 8.30 am
	December Media Release	

At each Board Meeting, the Presidents of all Member Societies will be invited to join an open session of the Board meeting and a social function will also be planned.

4. Higher Education Reforms pass in the Senate

The *Higher Education Support Bill 2003* passed through the Senate on 4 December and is now law. Passage of the legislation means that implementation of the reforms can start as scheduled in 2004. Unfortunately, the Government was not prepared to provide adequate indexation of operating grants. As a result, the value of the additional funding will be eroded in the not too distant future, without increased contributions from government.

The main changes to the original package entitled *Our Universities: Backing Australia's Future*, which was released in May 2003, are listed below:

- Doubling the growth places from 1,400 to 2,800 in 2007.
- Introduction of a 20% loan fee to apply to loans for undergraduate courses under FEE-HELP and all loans under OS-HELP.
- The maximum student contribution amounts per place have been set at an amount equivalent to current HECS rates plus 25%.
- An increase to the repayment threshold at which students begin to repay their HECS and other loans to $35,000 in 2004-05. As is current practice this will be indexed to bring it up to $36,184 in 2005-06.
- An additional 7,500 Commonwealth Accommodation Scholarships by 2008.
- Commonwealth Learning Scholarships will not be subject to the social security income test.
- A review of cost adjustment factor indexation for Commonwealth funding of universities from 2007-08.
- Removing the interest charge on FEE-HELP and OS-HELP.
- Extending the learning entitlement to seven years while maintaining the capacity for extra years if necessary.

- Relaxation of the Workplace Relations requirements necessary to receive an increase in the basic grant amount under the Commonwealth Grant Scheme.
- A review of indexation must be completed prior to February 2005.
- A review of the impact on the higher education sector of the reforms enacted through the legislation must be commenced prior to 31 December 2006.

The net result is an increased government commitment of $313.6 million and the abolition of the workplace reforms outlined in the May policy paper.

Additional government contribution in $ million

	2004	2005	2006	2007	Total
May 2003	67.9	249.3	486.2	661.1	1464.5
Dec 2003	97.9	373.3	583.6	723.3	1778.1

The DEST Newsletter No.5 contains a full account of the changes. It can be read at: http://www.backingaustraliasfuture.gov.au/implementation/newsletter/news5.htm.

5. Is strategic public-good research doomed?

Indications are that they may be problems in the longer term for strategic research undertaken for the public good, because it is not clear where this work is going to be done in the future and who is going to do it. The universities will evidently be focusing their efforts on basic research funded by the ARC, so they may not be doing much. There is pressure on CSIRO to earn more external earnings so don't like it will have significant big programs in this area. And the key selection criteria from the new guidelines for CRCs will, if they are strictly adhered to, result in the death knell for any "Public Benefit" research under the CRC banner.

The Guidelines state: "Applications will be assessed on the extent to which they meet the following selection criteria:

1. The outcomes will contribute substantially to Australia's industrial, commercial and economic growth (*Further to this criterion, it is also stated that "...business cases that rely solely on public benefit outcomes are unlikely to be competitive").*.
2. The path to adoption (commercialisation/utilisation) will achieve the identified outcomes.
3. The collaboration has the capability to achieve the intended results.
4. The funding sought will generate a return and represents good value for the taxpayer.

These selection criteria will be used in Stage 1 and Stage 2. Selection criteria (1) and (2) will be given greater weight in the overall judgement at each stage."

These words provide a clear statement that CRCs focused solely on public benefits outcomes are unlikely to be successful. So who is going to do research on climate change, floods droughts and greenhouse gas emissions?

Who is going to work on dry land salinity and land degradation?

Who is going to work on environmental factors affecting the coastal zone and urban development?

Who is going to work on developing new techniques to explore the earth?

Not at all clear.

6. Scientists in 2004 Australia Day Honours list.

It was good to see several scientists recognised in the Australia Day Honours list this year.

Dr Robin Batterham, who has been Chief Scientist since 1999, became an Officer of the Order of Australia;

Professor Graeme Clark, inventor of the cochlear implant the foundation director of Melbourne's Bionic Ear Institute inventor of the cochlear ear implant; and **Professor Adrienne Clarke**, of the Plant Cell Biology Research Centre at the University of Melbourne, became Companions of the Order of Australia. Clarke was a past chairman of the board at the CSIRO and works on cellular recognition in plants.

Two Australians now working in the USA, Dr Victor Fazio and Professor Enid Gilbert-Barness also became Officers of the Order of Australia:

Dr Victor Fazio graduated from the University of Sydney but is now working in the colorectal surgery department of the Cleveland Clinic in Ohio. He was honoured for his work on Crohn's disease.

Fellow University of Sydney graduate **Professor Enid Gilbert-Barness**, an Emeritus Professor of Pathology and Laboratory Medicine at the University of Wisconsin-Madison, was honoured for her research into cardiovascular, genetic and metabolic disease.

Congratulations to these scientists, who can be found along with all the other awardees at: http://www.itsanhonour.gov.au/about_honours.html

7. Vicki Sara leaves ARC

Professor Vicki Sara, CEO of the Australian Research Council (ARC), has announced her departure from the Council. Professor Sara will continue as the CEO until the Government's May Budget. Professor Sara has led the ARC for over seven years, having been appointed as its first CEO in July 2001, and Chair from September 1997 to June 2001.

During this period the Council has undergone tremendous change and recognised ground-breaking achievements. Professor Sara, was the principal architect behind the establishment of the ARC as an independent agency, and it's National Competitive Grants Program, which embodies a commitment to excellence and recognises the value of Australia's research talent.

The ARC is playing a key role in the implementation of the Government's innovation program, *Backing Australia's Ability* which included an additional $736M over 5 years to double the ARC's funding. Vicki Sara will be missed as head of the ARC and we wish her well in her future endeavours.

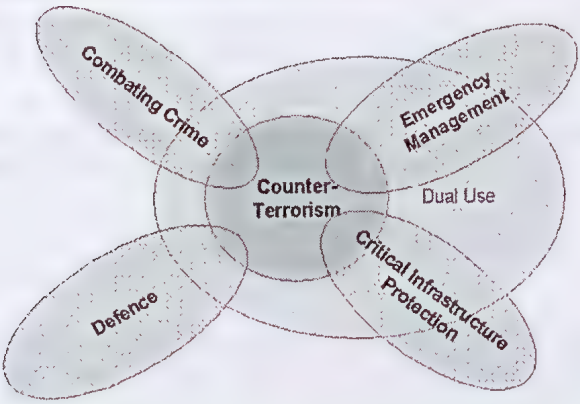
8. National Security Division of PM&C establishes SET Unit to fight terrorism

A Science, Engineering and Technology (SET) Unit has been established in the National Security Division of the Department of the Prime Minister and Cabinet (PM&C). Staff for the Unit have been seconded from the Defence Science and Technology Organisation, CSIRO, DEST, the AFP and the intelligence community.

The Unit will provide an overarching view of national research requirements and priorities for counter-terrorism that is currently lacking. Although some agencies with responsibility for counter-terrorism (user agencies) have means of accessing research, opportunities are being missed due to lack of knowledge of the needs or the capability of SET agencies to provide solutions. The Unit will also provide the focus for international collaboration in this area.

The Unit is developing a set of priority requirements for possible research based on capability gaps identified by the user agencies. At the same time, it is developing a research programme to support the best research proposals in line with the priority requirements. To this end, it is consulting widely both in the counter terrorism and SET communities.

Scope of SET Unit



The SET Unit can be contacted on setu@pmc.gov.au or by phone to Susan Wishart (who provided this information) on (02) 6271 5247. More details are available at www.pmc.gov.au

26th February 2004 **MEDIA RELEASE** **04/04**

Piecemeal approach to ageing ignores productivity growth from science, technology and R&D

"The best approach is to look for ways to increase the size of the economy so that we all have higher incomes and are better able to meet the costs associated with an ageing population"

Choice 4 – The Hon. Peter Costello, *Australia's Demographic Challenges.*

The President of FASTS, Professor Snow Barlow said science, technology and R&D are the engine that will drive increased Australia's productivity and economic growth.

"The two key variables to increase the size of the economy are labour market participation and productivity.

"Mr Costello's paper discusses a range of proposals to enhance labour market participation but is essentially silent on increasing productivity.

"Productivity growth does not come from nowhere. Uptake of new technologies and improvements on existing technological processes are estimated to comprise about 50% of productivity growth.

"Increased investment in Australia's science and technology knowledge base must be an essential component of a coherent national approach to demographic change.

"Economic growth in the global economy is increasingly dependent on the quality and capacity of the science and technology knowledge base. Today's research and innovation underpins the industries of the future, which in turn create wealth and jobs.

"The Government characterized its' 2001 innovation statement – *Backing Australia's Ability* – as a 'first step' to place Australia on the path to joining the world's new innovation economies.

"*Australia's Demographic Challenges* provides another reason why Australia must take the 'second step' when the Government announces the follow up to *Backing Australia's Ability* in the budget.

"Including the $2.9 billion of BAA, Australia's gross expenditure on R&D as a percentage of GDP will have dropped below 1.4% by 2005/6, down from 1.69% in 1995/6. Over the same period, the weighted average of R&D investment in OECD countries will increase from about 2.1% to 2.5%.

"These trends do matter. BAA only slowed Australia's relative decline and did not begin to bridge the gap between us and the new knowledge economies", concluded Professor Barlow.

Media Inquiries: Bradley Smith (0408) 511 261

REVIEW

AUSRIVAS Online – on target?

Last year, I reviewed the recently-developed AUSRIVAS Online course for the CRCFE, working my way through each of the four modules, tackling some of the self-quizzes, and using my experience with students to try and see where some of the learning problems might arise. My main objective in this was to get a feel for how effective an online course might be for teaching the theory behind the field and laboratory methods of the river health assessment procedures that comprise the AUSRIVAS package. I also wanted to see how well the modules articulated in taking a student from the basic underlying theory of sampling through to applying the appropriate State model to the data.

I was impressed by the clear layout of the course, by the support of the electronic literature and readings, and the internal quizzes kept the bulk of the reading lively and interactive. The core of the course is not overloaded with text - always important online - and you are frequently directed to much of the material already on the CRCFE website about AUSRIVAS for more detail. In other online units that I have evaluated, authors often overwhelm the students with material or, perhaps worse, long sequences of links that end up being rather confusing. This unit is well-crafted such that there is not excessive levels of linking and the detail of explanation is intermediate with scope to go further if needed. The glossary of terms (as links) is handy, and in general, the modules interact with each other well. The sequence is logical as you would expect with a course that expounds a series of methods.

While I did not use the bulletin board or private email discussions with the tutor as offered in the unit, I was pleased to see that they were included. Not only that, a cheerful icebreaker exercise insured that users unfamiliar with bulletin boards could play a small game to develop their skills and confidence. So this online unit is more than a glorified front-end to the already comprehensive electronic material on AUSRIVAS - it has been designed with learning outcomes and pedagogical approaches in mind. My experience of online units is that use of the bulletin board is uneven and while this is a function of the students' needs, the questions that are posed at regular intervals are sufficiently challenging to encourage answers at a range of levels.

But online delivery has its limits, and this course is no exception. Where are the virtual waders? The smell of alcohol? The evasive gyrinid? Luckily, there is a fifth module, a 4-day practical workshop where students gain experience in standardized methods for collecting and sorting the macroinvertebrates, and learning correct use of the field equipment and while I did not do this module, I believe it would be essential. We all know that there are small tricks in the field that go a long way to improving data quality and field efficiency, and the Canberra group have many years of experience to share. While one may not need to do all the modules, I think this final 'hands-on' component is valuable and would help much of the theory become grounded in application.

For busy managers, professionals, teachers and, of course, undergraduate students, this self-paced online course offers a relatively efficient way to learn the AUSRIVAS techniques. I understand each module costs about $400 (incl. GST), and the whole course can be done in 12 weeks. The instructors use the online approach effectively and avoided most traps for young players. I believe nothing will ever replace long years of 'hands-on' experience yet this package of 5 modules,that complement each other nicely comes pretty close.

Andrew Boulton

FORTHCOMING CONFERENCES/WORKSHOPS

OVERSEAS

7th INTECOL International Wetlands Conference at Utrecht University, The Netherlands, 25 to 30 July. This Conference will be organized under the auspices of the International Association of Ecology (INTECOL). More information at http://www.bio.uu.nl/intecol/

29th International Association of Theoretical and Applied Limnology (SIL) will be held at the Helsinki University Lahti Research and Training Centre, slightly north of Helsinki on 8 to 14 August. An extensive itinerary is being organized in this limnological mecca. Website: www.palmenia.helsinki.fi/congress/SIL2004

2nd International Symposium on Riverine Landscapes, The scientific basis of restoring watercourses in landscapes, will be held from 15 to 22 August in Sweden. Experts in stream restoration science from all over the world will converge on the banks of the free-flowing Pite River to synthesize the current state of knowledge on restoring riverine ecosystems, and explore future research directions. For further information visit the website at http://www.riverine-landscapes.ch

Security and Sustainability in Water Resources is to be held from 6 to 9 September in Kathmandu, Nepal. This conference is organized by the Center for Sustainability, Environment, Equity and Partnership (SEEP); a non-profit NGO based in Kathmandu and is supported by His Majesty's Government of Nepal. See : www.seepwater.org for further information.

AUSTRALIAN

2004

International Commission on Irrigation and Drainage (ICID) 2nd Asian Regional Conference, to be held at Moama (NSW) from 14 to 17 March. The theme of the conference is *Irrigation in a Total Catchment Context, Sharing the River.* For further information see www.icid2004.com

Short Course on Geospatial Data for Natural Resource Management, to be held at the Australian Resources Research Centre, Bentley (WA) from 23 to 25 March. For further details see: http://www.aseg.org.au/wa/salinity/

The 21st Commonwealth Agricultural Conference 'The Power of Water' will be the theme of the 21st Commonwealth Agricultural Conference taking place in Albury, from 24 to 27 March. Prime Minister, John Howard, will deliver the welcome address. Experts on water management and related issues will deliver papers on subjects such as managing the world's finite resources; the water balance - effective farming versus sustainability; water rights - current situation and options for the future. There will also be a contribution from a youth panel. www.commagshow.org/conference/details.html

Stream Habitats and Hydraulics Field Course, organised by the Centre for Riverine Landscapes (Griffith University) and the Canadian Rivers Institute, to be held at EcoCentre at Crystal Waters, Conondale Qld from 27 March to 4 April. If you are interested in this course see the "Whats On" section of the web site for details http://www.gu.edu.au/centre/riverlandscapes/

Workshop on Contaminants and Ecological Risk Assessment, to be held in Adelaide from 5 to 7 April. For more details refer to: http://www.clw.csiro.au/conferences/contaminants/

7th Biennial Conference of the Irrigation Association of Australia, to be held in Adelaide from 11 to 13 May. For more information contact the conference organisers by fax 02 8234 1231 or email irrigation@etf.com.au

UNEP GPA (=Global Plan of Action for protection of the environment from land-based activities) H_2O conference, 11 to 14 May in Cairns. More info at: http://www.hilltops2oceans.org

International Commission on Irrigation and Drainage 2nd Asian Regional Conference, to be held at the Moama Bowling Club NSW from 14 to 17 May. *Theme: Irrigation in a Total Catchment Context, Sharing the River. See* http://www.icid2004.com/overview.htm for further information.

2004 Fenner Conference On The Environment - "Understanding the Population-Environment Debate: Bridging Disciplinary Divides" will be held at the Shine Dome, Canberra on 24 and 25 May. See http://www.science.org.au/conferences/fenner/index.htm for additional information.

9th Annual National Water Conference 2004, to be held at the Melbourne Convention Centre, Melbourne on 16 and 17 June. For conference updates, look up the Web site: http://www.terrapinn.com/2004/waterex_AU

Joint Estuarine and Coastal Sciences Association (ECSA) and Estuarine Research Federation (ERF) International Conference, to be held at Southern Cross University from 20 to 25 June. The Conference Theme is "Response of tropical, temperate and polar estuaries to natural and anthropogenic changes". Visit the conference website at www.scu.edu.au/ecsa37erf2004conference

13th International Soil Conservation Organization Conference (ISCO) to be held at the Brisbane Convention and Exhibition Centre from 4 to 9 July. For further details visit: www.isco2004.org

5th Australian Algal Workshop will be held at Central Queensland University, Rockhampton, Queensland from 24 to 26 July. For information please contact Dr Larelle Fabbro (l.fabbro@cqu.edu.au) or phone (07) 4926 1460.

Salinity Solutions: Working with Science and Society Conference, to be held at The Capital Theatre, Bendigo from 2 to 5 August. See website for further information at www.cdesign.com.au/salinity2004

Fifth International Symposium on Large Branchiopods (ILBS5) will be held at Toodyay, near Perth, 16 to 20 August. The convenor is Dr Brenton Knott. For information see http://www.zoology.uwa.edu.au/ILBS5 and for answers to specific questions contact ILBS5@cyllene.uwa.edu.au

International Riversymposium 'Threats to Sustainable River Systems-beating the odds', to be held in Brisbane from 31 August to 3 September. For further information see: http://www.riverfestival.com.au/symposium

2004 Australian Society for Fish Biology Workshop and Conference (ASFB*2004*) will take the form of a National Symposium on Ecosystem Research and Management of Fisheries (Adelaide, from 19 to 21 September), followed by the **ASFB Annual Conference** (Glenelg, from 22 to 24 September). Contact the Symposium and Conference Secretariat for further information [carolyn.anderson@cmmg.com.au]

4th International Symposium on Extant and Fossil Charophytes, to be held at Robertson (NSW) from 25 to 27 September. Check the Symposium website at: www.uow.edu.au/science/geosciences/conferences/irgc04

1st National Salinity Engineering Conference, to be 9 to 12 November at Burswood International Resort, Perth, WA. This will be the first national conference specifically convened to focus on engineering solutions to both dryland and irrigation induced salinity. Further information visit: http://www.congresswest.com.au/salinity2004/

43rd Annual ASL Congress, to be held at the University of Adelaide from 30 November to 3 December. Check out the web closer to the month: http://www.asl.org.au/

ASL VOLUNTEERS

The following members have volunteered to speak as experts on behalf of the ASL.

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ASL MEMBERSHIP FORM

Fill out the form below and send onto the Treasurer/Membership Officer (address below), or alternatively go to the ASL website (http://www.asl.org.au/asl_member.htm), follow the link to 'Membership application via the web'. Fill in the details on the form, including credit card details, and submit. ASL is not registered for GST, therefore ASL does not charge GST.

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If you are a member of the ASL and want to receive your newsletter electronically, then please fill in the form below. Members who do not want to receive an electronic version, and would rather still receive the paper version will continue to do so, but you are encouraged to also fill in and send the form below (we do not have plans to phase out the paper version).

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[1] Rich Text Format (.rtf) is a format that can be opened in any word processor, although slight variations in layout may occur in different programs.

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